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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,825	12/21/2004	Peter Klaus Bachmann	DE 020166	3595
24737 7590 10/30/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER STAMBOVSKY, HIBRET A	
			ART UNIT 4181	PAPER NUMBER
			MAIL DATE 10/30/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/518,825

**Applicant(s)**

BACHMANN ET AL.

**Examiner**

Hibret A. Stambovsky

**Art Unit**

4181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because the drawings do not illustrate the structure of the invention. Applicant must provide drawings that illustrate the structure of the invention including every feature specified in the claim. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (6,096,496) in view of Lieber et al. (7,129,554).

Considering claim 1, Frankel discloses an optical signal processing device equipped with a source of electromagnetic radiation of variable intensity (**See Col. 15 line 40-44, Col. 33 line 9-20, Col. 34 line 60-67 and Col. 35 line 1-7 i.e. different light sources like lamps, laser providing a variable intensity**), a non-linear optical component (**See Col. 23 line 7-10 i.e. a scattering medium to radiate light non-directionally**), which comprises at least one photoluminescent structure (**See Col. 17 line 53-67 i.e. photoluminescent structure**), and with a means of detecting electromagnetic radiation (**See Col. 32 line 33-40 i.e. electromagnetic radiation detector**).

Frankel does not specifically disclose a carbon nanotube. Lieber teaches a carbon nanotube (**See Col. 1 lines 30-35, Col. 23 line 65-67 and Col. 24 line 38-43 i.e. carbon nanotube comprising a photoluminescent material**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Frankel, and include a carbon nanotube, as taught by Lieber, thus providing efficient transport of charge carrier and excitations, as discussed by Lieber (**Col. 1 lines 21-25**).

Considering claim 5, Frankel discloses a non-linear optical component having at least one photoluminescent structure (**See Col. 17 line 53-67, Col. 20 line 48-52, Col. 23 line 7-10 i.e. a scattering medium comprising a photoluminescent emitting structure**).

Frankel does not specifically disclose a carbon nanotube. Lieber teaches a carbon nanotube (**See Col. 1 lines 30-35, Col. 23 line 65-67 and Col. 24 line 38-43 i.e. carbon nanotube comprising a photoluminescent material**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Frankel, and include a carbon nanotube, as taught by Lieber, thus providing efficient transport of charge carrier and excitations, as discussed by Lieber (**Col. 1 lines 21-25**).

Considering claim 2, Frankel discloses an optical signal processing device as claimed in claim 1, characterized in that the non-linear optical component comprises a substrate and a layer having a number of photoluminescent structure (**See Col. 17 line 53-67, Col. 26 line 7-28 i.e. a Laser comprising a substrate and a photoluminescent emitting structure**).

Considering claim 3, Frankel discloses an optical signal processing device as claimed in claim 2, characterized in that the non-linear optical component further comprises an intermediate layer between substrate and the layer having a number of photoluminescent structure (**See Col. 26 line 7-27 and line 44-55, Fig. 15, Fig 16 i.e. a wave guide between the substrate and a layer having a photoluminescent structure**).

Considering claim 4, Frankel discloses an optical signal processing device as claimed in claim 1, characterized in that the electromagnetic radiation is monochromatic coherent laser light (**See Col. 19 line 35-50, Col. 32 line 41-51 i.e. monochromatic coherent laser light which is a single wave length**).

Considering claim 6, Frankel does not specifically disclose a non-linear optical component as claimed in claim 5, characterized in that the carbon nanotube has a thin film coating

Lieber teaches a non-linear optical component as claimed in claim 5, characterized in that the carbon nanotube has a thin film coating (**See Col. 5 line 54-57 i.e. the carbon nanotube has a thin film coating**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Frankel, and the carbon nanotube has a thin film coating, as taught by Lieber, thus providing efficient transport of charge carrier and excitations, as discussed by Lieber (**Col. 1 lines 21-25**).

Considering claim 7, Frankel does not specifically disclose the carbon nanotube is embedded in a non-oxidizing matrix.

Lieber teaches the carbon nanotube is embedded in a non-oxidizing matrix (**See Col. 11 line 6-38 i.e. buffer gas as a non-oxidizing matrix**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Frankel, and the carbon nanotube is embedded in a non-oxidizing matrix, as taught by Lieber, thus providing efficient transport of charge carrier and excitations, as discussed by Lieber (**Col. 1 lines 21-25**).

Considering claim 8, Frankel does not specifically disclose the carbon nanotube is embedded in a non-oxidizing matrix, which is transparent for electromagnetic radiation.

Lieber teaches a non-linear optical component as claimed in claim 5, characterized in that the carbon nanotube is embedded in a non-oxidizing matrix, which is transparent for electromagnetic radiation (**See Col. 16 line 15-20, Col. 25 line 38-43, Col. 11 line 6-38 i.e. glass which is non-oxidizing and transparent material**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Frankel, and the carbon nanotube is embedded in a non-oxidizing matrix, which is transparent for electromagnetic radiation, as taught by Lieber, thus providing efficient transport of charge carrier and excitations, as discussed by Lieber (**Col. 1 lines 21-25**).

Considering claim 9, Frankel does not specifically disclose the carbon nanotube is embedded in a non-oxidizing, flexible matrix.

Lieber teaches the carbon nanotube is embedded in a non-oxidizing, flexible matrix (**See Col. 16 line 15-20, Col. 25 line 38-43, Col. 11 line 6-38 i.e. glass which is non-oxidizing and transparent material i.e. buffer gas as a non-oxidizing matrix**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Frankel, and the carbon nanotube is embedded in a non-oxidizing, flexible matrix, as taught by Lieber, thus providing efficient transport of charge carrier and excitations, as discussed by Lieber (**Col. 1 lines 21-25**).

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### ***Conclusions***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hibret A. Stambovsky whose telephone number is 5712705145. The examiner can normally be reached on Monday to Thursday from 8:00 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on 5712727876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HAS  
10/23/2007

  
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